

WP 1.20.11 Please replace the paragraphs starting at line 16 on page 73 and ending at line 21 on page 74 with the following replacement paragraphs:

AAVNMDAR1-vaccinated rats were compared with AAVlac rats to determine whether the immunization was associated with impairment in a spatial maze task (Barnes (1979) *J. Comp. Physiol. Psychol.* 93: 74-104). ~~Fig. 12A~~ Fig. 9 shows the results of AAVNMDAR1 vaccination effects on learning and memory.

Fig. ~~12A~~ 9A is a graph showing errors and latencies recorded on the Barnes Circular Maze from AAVlac-treated rats, and AAVNMDAR1-vaccinated rats. Fig. ~~12B~~ 9B is a graph showing the results from the line crossing and circular track mobility tests. Data represents the number of line crossings in 5 min intervals over 5 successive days in AAVlac-treated, or AAVNMDAR1-vaccinated rats. In the circular track test, the number of completed circuits in successive days for AAVlac-treated and AAVNMDAR1-vaccinated animals are represented. Fig. ~~12C~~ 9C depicts the results from the contextual fear conditioning for AAVlac-treated and AAVNMDAR1-vaccinated animals (\* $p=0.025$ ). Fig. ~~12D~~ 9D depicts the results from the Spontaneous Object Recognition test. The left graph is a comparison within groups of time spent exploring during the sample phase (A1 vs A2) and the choice phase (A3 vs B). The right graph is a comparison between groups of total time spent exploring in sample phase (A1 + A2), choice phase (A3 + B), and the discrimination index (B-A3). (\*  $p=0.041$ ).

Results showed that in the Barnes maze the AAVNMDAR1 rats ( $n=15$ ) had significantly improved performance compared to AAVlac rats ( $n=16$ ) as defined by reduced latencies to enter the escape box (repeated measures ANOVA,  $p=0.043$ , Fig. ~~12A~~ 9A). Improved performance in the Barnes maze may be due to other factors such as increased mobility. To examine increased mobility, the rats were tested on circular track and line crossing mobility paradigms, both of which failed to demonstrate a difference between the groups (repeated measures ANOVA,  $p=0.87$  and  $p=0.32$  respectively, Fig. ~~12B~~ 9B).

NMDA receptor activation has also been demonstrated to be involved in the storage of other forms of memory, such as contextual memory (Kiyama *et al.* (1998) *J. Neurosci.* 18: 6704-6712 and object recognition memory (Puma *et al.* (1998) *Neurosci. Lett.* 244: 97-100). To assess whether the vaccinated rats had an improved contextual memory, the rats were tested